SHARP

SERVICE MANUAL

S71F620A-S10

20A-S100

20A-S120

COLOR TELEVISION
SIGMA 9600 CHASSIS
Chassis No. A10

MODELS 20A S100
20A S120

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

ELECTRICAL SPECIFICATIONS

POWER INPUT ..... 120 V AC 60 Hz
POWER RATING ..... 87 W
PICTURE SIZE ..... 192.2 sq. in.
CONVERGENCE ..... Magnetic
SWEEP DEFLECTION ..... Magnetic
FOCUS ..... Hi-Bi-Potential Electrostatic
INTERMEDIATE FREQUENCIES
- Picture IF Carrier Frequency ..... 45.75 MHz
- Sound IF Carrier Frequency ..... 41.25 MHz
- Color Sub-Carrier Frequency ..... 42.17 MHz (Nominal)

AUDIO POWER OUTPUT ..... 2.4 W(1.2W + 1.2W) RATING
(at 10% Distortion& Dual channel operate)
SPEAKER
- SIZE ..... 3.03" Magnet
- VOICE COIL IMPEDANCE ..... 32 ohm at 400 Hz

ANTENNA INPUT IMPEDANCE
- VHF/UHF ..... 75 ohm Unbalanced

TUNING RANGES
- VHF-Channels ..... 2 thru 13
- UHF-Channels ..... 14 thru 69
- CATV Channels ..... 1, 14 thru 125 (EIA, Channel Plan)

Specifications are subject to change without prior notice.

SHARP ELECTRONICS CORPORATION

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IMPORTANT SERVICE SAFETY PRECAUTION

■ **Service work should be performed only by qualified service technicians who are thoroughly familiar with all safety checks and servicing guidelines which follow:**

WARNING

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC power before servicing.
3. Semiconductor heat sinks are potential shock hazards when the chassis is operating.
4. The chassis in this receiver is hot. (connected to one side of the AC line).
   To prevent electrical shock use an isolation transformer between the line cord and power receptacle, when servicing this chassis.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove the static charge by connecting a 10k ohm resistor in series with an insulated wire (such as a test probe) between the picture tube ground and the anode lead. (AC line cord should be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage anode completely.

X-RADIATION AND HIGH VOLTAGE LIMITS

1. All service personnel should be aware of the procedures and instructions covering X-radiation. The only potential source of X-ray in current solid state TV receivers is the picture tube. However, the picture tube does not emit measurable X-Ray radiation if the high voltage is as specified in the "High Voltage Check" instructions. It is only when high voltage is excessive that X-radiation is capable of penetrating the picture tube shell which includes lead in glass material. The important precaution is to keep high voltage below the maximum level specified.
2. It is essential that servicemen have available at all times an accurate high voltage meter.
   The calibration of this meter should be checked periodically.
3. High voltage should always be kept at the rated value —no higher. Operation at higher voltages may cause a failure of the picture tube or high voltage circuitry and, also, under certain conditions, may produce radiation in excess of desirable levels.
4. When the high voltage regulator is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be tested while monitoring the high voltage with a meter to be certain that the high voltage does not exceed the specified value and that it is regulating correctly.

IMPORTANT SERVICE SAFETY PRECAUTION
(Continued)

5. Do not use a picture tube other than that specified or make unrecommended circuit modifications to the high voltage circuitry.
6. When trouble shooting and taking test measurements on a receiver with excessive high voltage, avoid being unnecessarily close to the receiver. Do not operate the receiver longer than is necessary to locate the cause of excessive voltage.

BEFORE RETURNING THE RECEIVER (Fire & Shock Hazard)

Before returning the receiver to the user, perform the following safety checks.

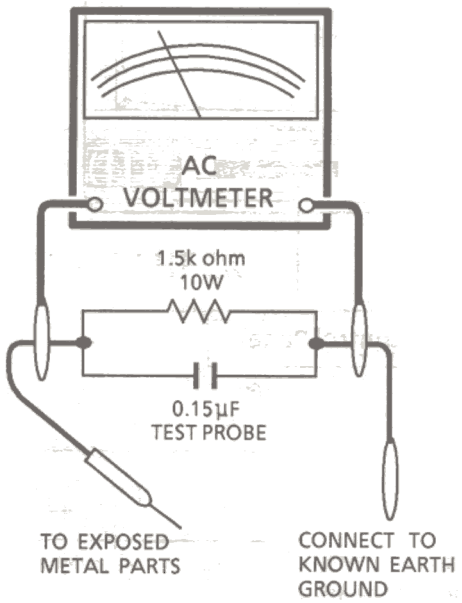
1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.

- Plug the AC cord directly into a 120 volt AC outlet, (Do not use an isolation transformer for this test).
- Using to clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15µF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as electrical conduit or electrical ground connected to earth ground.
- Use an AC voltmeter having with 5000 ohm per volt, or higher, sensitivity to measure the AC voltage drop across the resistor.
- Connect the resistor connection to all exposed metal parts having a return to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.

  All check must be repeated with the AC line cord plug connection reversed. (IF necessary, a non-polarized adapter plug must be used only for the purpose of completing these check.)

  Any current measured must not exceed 0.5 milliamp.

Any measurements not within the limits outlined above are indicative of a potential shock hazard and corrective action must be taken before returning the instrument to the customer.



SAFETY NOTICE

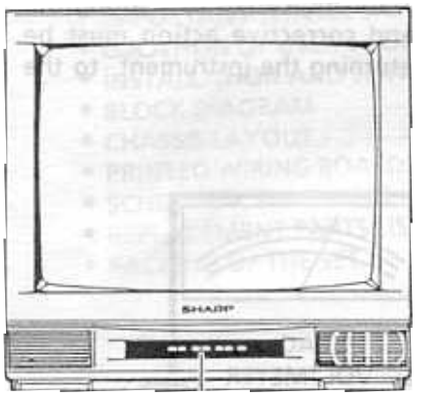
Many electrical and mechanical parts in television receivers have special safety-related characteristics.

These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage, etc.

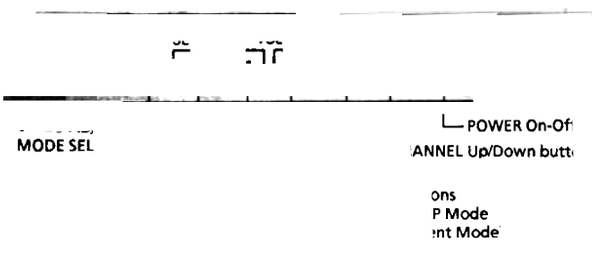
Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "⚠" and shaded areas in the ***Replacement Parts Lists*** and ***Schematic Diagrams***. For continued protection, replacement parts must be identical to those used in the original circuit. The use of a substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire, X-radiation or other hazards.

LOCATION OF USER'S CONTROL

Front

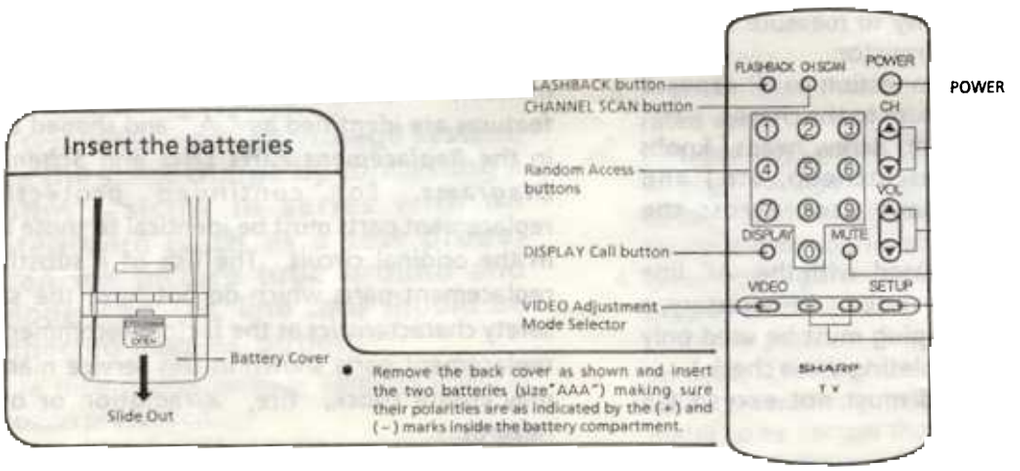


Front Control Panel



Infrared Remote Control Unit

RRMCG0797CESA



INSTALLATION AND SERVICE INSTRUCTIONS

Note (1) When performing any adjustments to resistor controls and transformers use non-metallic screwdriver or TV alignment tools.
(2) Before performing adjustment, TV set must be on at least 15 minutes.
(3) Set to standard setting mode : Push the "VIDEO" button on the remote controller six times one after the other to make sure "RESET" appears on the screen. Now push the " + " button.

CIRCUIT PROTECTION

The receiver is protected by a 4.0A fuse (F701), mounted on PWB-A, wired into one side of the AC line input.

+ 122V DC REGULATOR ADJUSTMENT

The + 122V DC Adj. control (R707) is adjusted at the factory. However, should readjustment be required, proceed as follows:

1. Actuate the receiver with 120V AC input voltage.
2. Select a local channel.
3. Using the remote controller, set the brightness level and contrast level to maximum.
4. Connect positive lead of Voltmeter to TP701 on PWB-A; negative lead to chassis ground (negative side of C706).
5. Adjust R707 to obtain a + 122V DC reading.
   CAUTION: ***To insure proper operation and circuit reliability, do not exceed + 122V DC.***

X-RADIATION PROTECTOR CIRCUIT TEST

After service has been performed on the horizontal deflection system, high voltage system, or + B system, test the X-Radiation protection circuit to ascertain proper operation as follows:

1. Apply 120V AC using a variac transformer for accurate input voltage.
2. Allow for warm up and set to standard setting mode.
3. Check the voltage of test point TP652. The voltage of this point should be about 21.9V DC.
4. Apply external 29.8V DC bias voltage to TP652. The horizontal oscillator is now interrupted.
5. To start operation, remove the above clip and touch the TP653 to chassis ground with a short clip lead. Remove the short clip lead as soon as the set resumes normal operation.
6. If the horizontal oscillator does not stop in step 4, the circuit must be repaired before the set is returned to the customer.

HIGH VOLTAGE CHECK

High voltage is not adjustable but must be checked to verify that the receiver is operating within safe and efficient design limitations as specified checks should be as follows:

1. Connect an accurate high voltage meter between ground and anode.
2. Operate receiver for at least 15 minutes at 120V AC line voltage, with strong air signal or properly tuned in test signal.
3. Set S851 on PWB-B to "Off" (center) position. Press the "VIDEO" button on the R/C to be in color mode-keep pressing the " – " button until color should be minimum (NO COLOR)
4. Turn *Screen* control (on T602) to maximum (CCW) end of its rotation.
5. The voltage should be approximately 26.5kV (at zero beam)

If a correct reading cannot be obtained, check circuitry for malfunctioning components. Upon completion of voltage check, readjust screen control for proper operation and set S851 to "on" position.

INSTALLATION AND SERVICE INSTRUCTIONS
(Continued)

FIELD ADJUSTMENT

■ RF-AGC Adjustment
1. Select a local channel.
2. Turn *RF-AGC* control (R213) fully counterclockwise. As a result noise appears on picture, then slowly turn the *RF-AGC* control (R213) clockwise until noise disappears.
3. Check that no noise appears on other channels.

■ Sound
1. Select a local channel.
2. Adjust volume so that sound is not distorted when the *Volume* switch is pressed.
3. Adjust sound det. coil (L303) to obtain max sound (after adjustment make sure that distortion buzz does not occur).

■ Sub-Brightness Control
1. Select a local channel.
2. Set to standard setting mode.
3. Turn the *Sub-Brightness* control (R431) to obtain normal brightness of the picture.

■ Vertical Size Adjustment
1. Select a local channel.
2. Press the "VIDEO" button on the Remote Controller (Set to PICTURE, BRIGHT mode). Then press the " – " button to obtain darker picture screen.
3. Adjust *Vertical Size* control (R509) for approximately 1/8 to 1/4 inch over-scan at top and bottom of picture screen.
4. Set to standard setting mode.

■ Sign Position Adjustment (Horizontal)
1. Receive channel-4.
2. Set to standard setting mode.
3. Press "DISPLAY" button on Remote Controller.
4. With *Sign Position* control (L1001), adjust horizontal position of the sign "4" to the following value.

■ Sub-Tint Adjustment
1. Select a local channel.
2. Set to standard setting mode.
3. Turn the *Sub-Tint* control (R1227) to make human natural-colored.

■ Sub-Color Adjustment
1. Select a local channel.
2. Set to standard setting mode.
3. Turn the *Sub-Color* control (R1202) on PWB-A for normal color.

■ Focus Adjustment
1. Select a local channel.
2. Set to standard setting mode.
3. Adjust *Focus* control (part of T602) for sharp scanning lines and/or sharp picture.

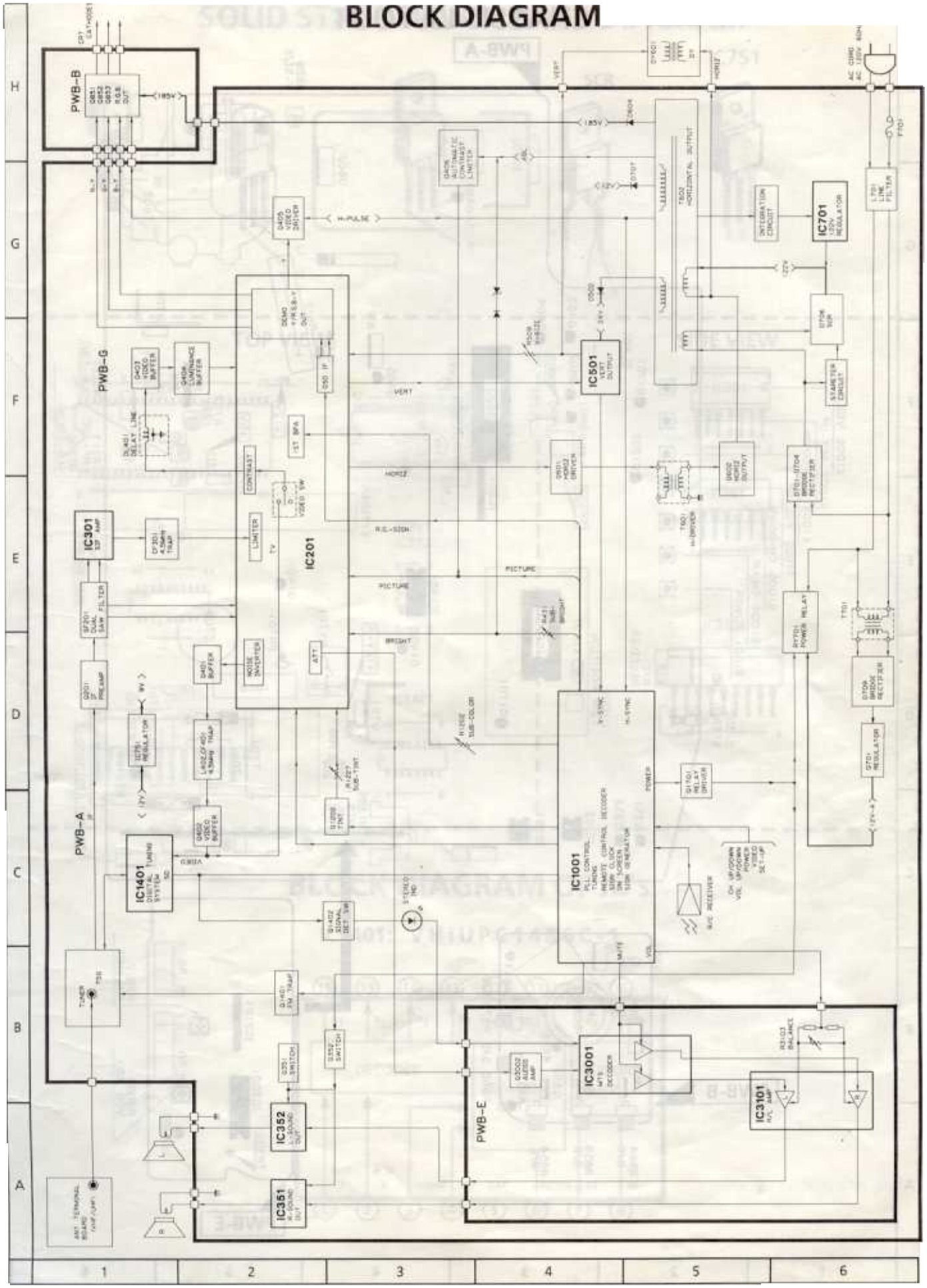
Table 1.Polarity of Speaker Terminals.

Connector leads	Speaker position (front view)	Terminal polarity
S3	Left	-
S4		+
S2	Right	-
S1		+

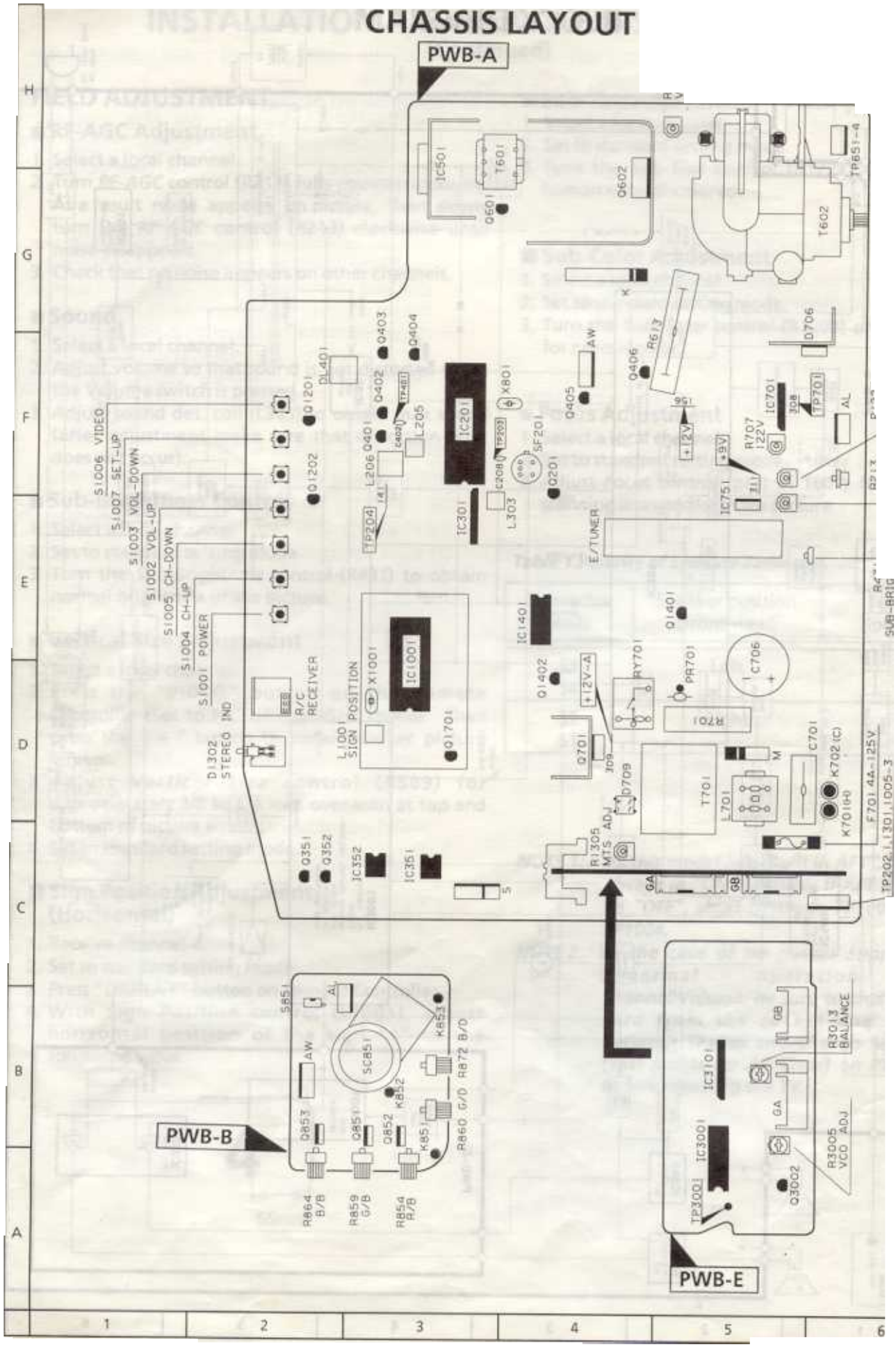
NOTE 1: *As this model has "Built in AFT", AFT is always in "ON" position. If AFT should be "OFF", short between TP1003 and TP1004.*

NOTE 2: *In the case of no power supply or abnormal operation of Channel/Volume, be sure to unplug AC cord from the socket and short between TP1005 and Chassis Ground (Test points for All Clear) on PWB-A, before repairing the TV.*

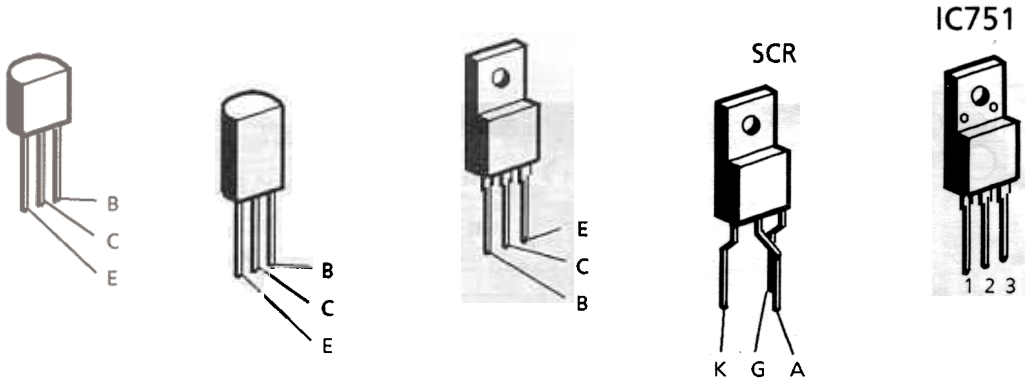
BLOCK DIAGRAM

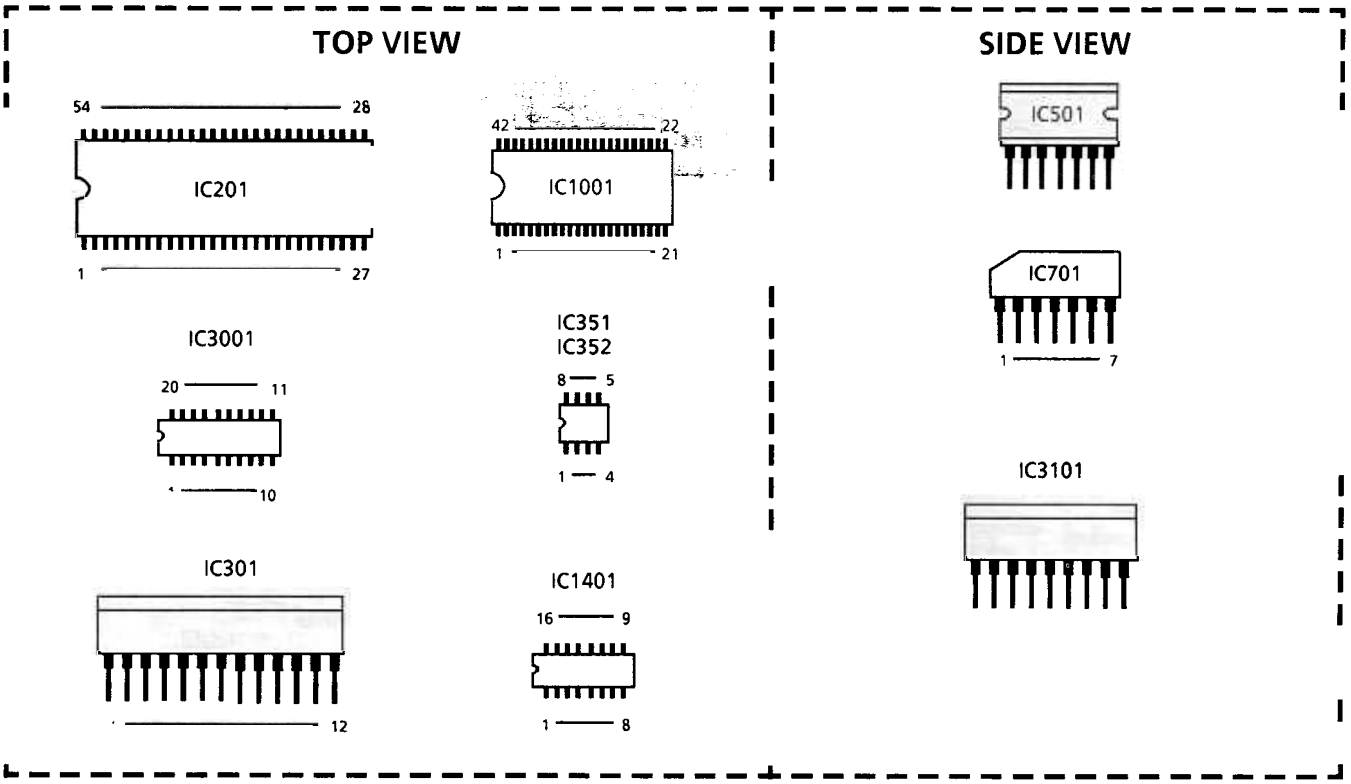


CHASSIS LAYOUT



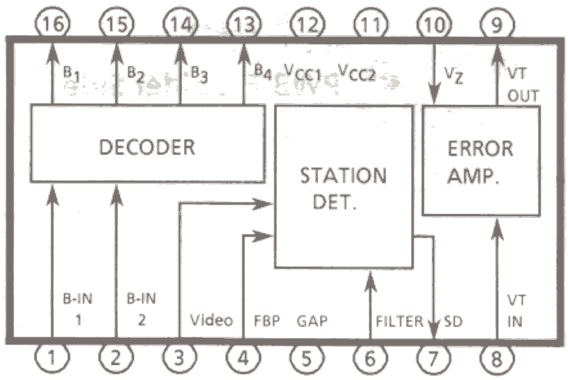
SOLID STATE DEVICE BASE DIAGRAM



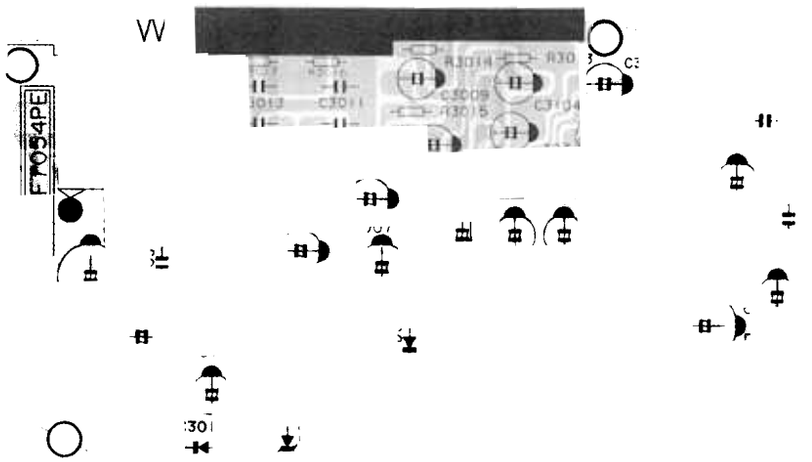


BLOCK DIAGRAM OF IC's

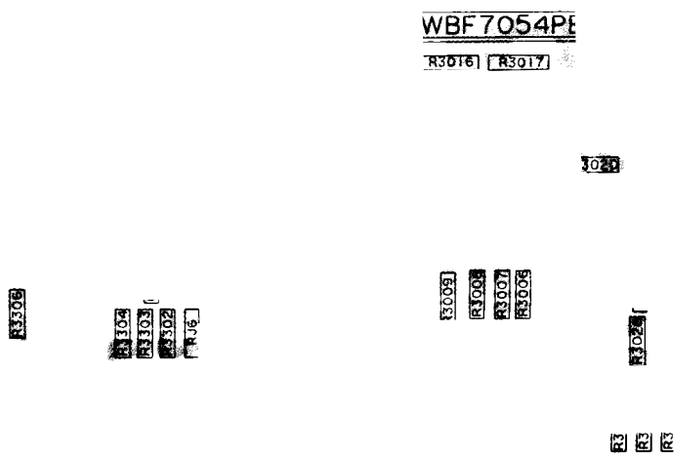
IC1401: VHiUPC1486C-1



PRINTED WIRING BOARD ASSEMBLIES

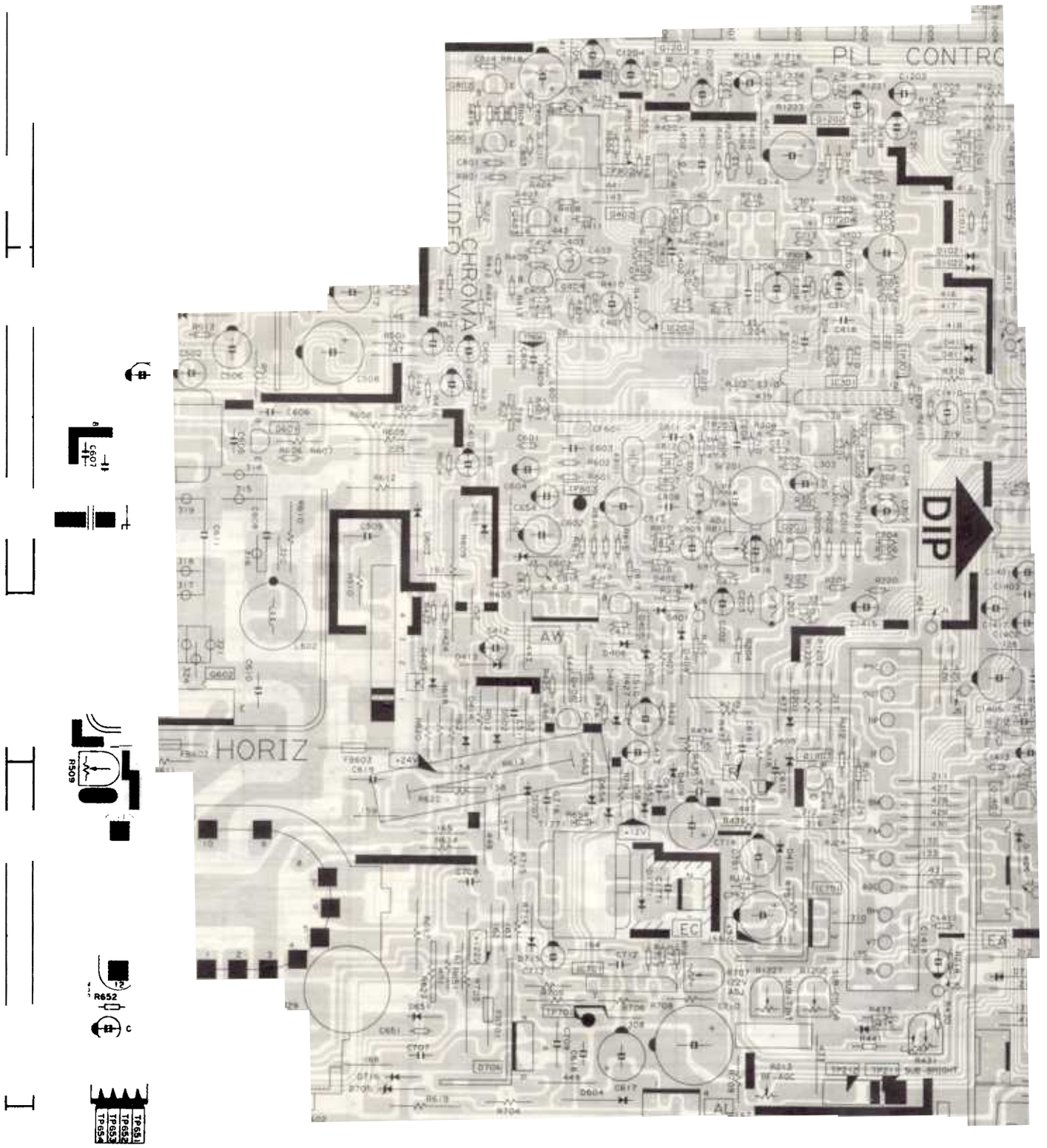


PWB-E Parts Side

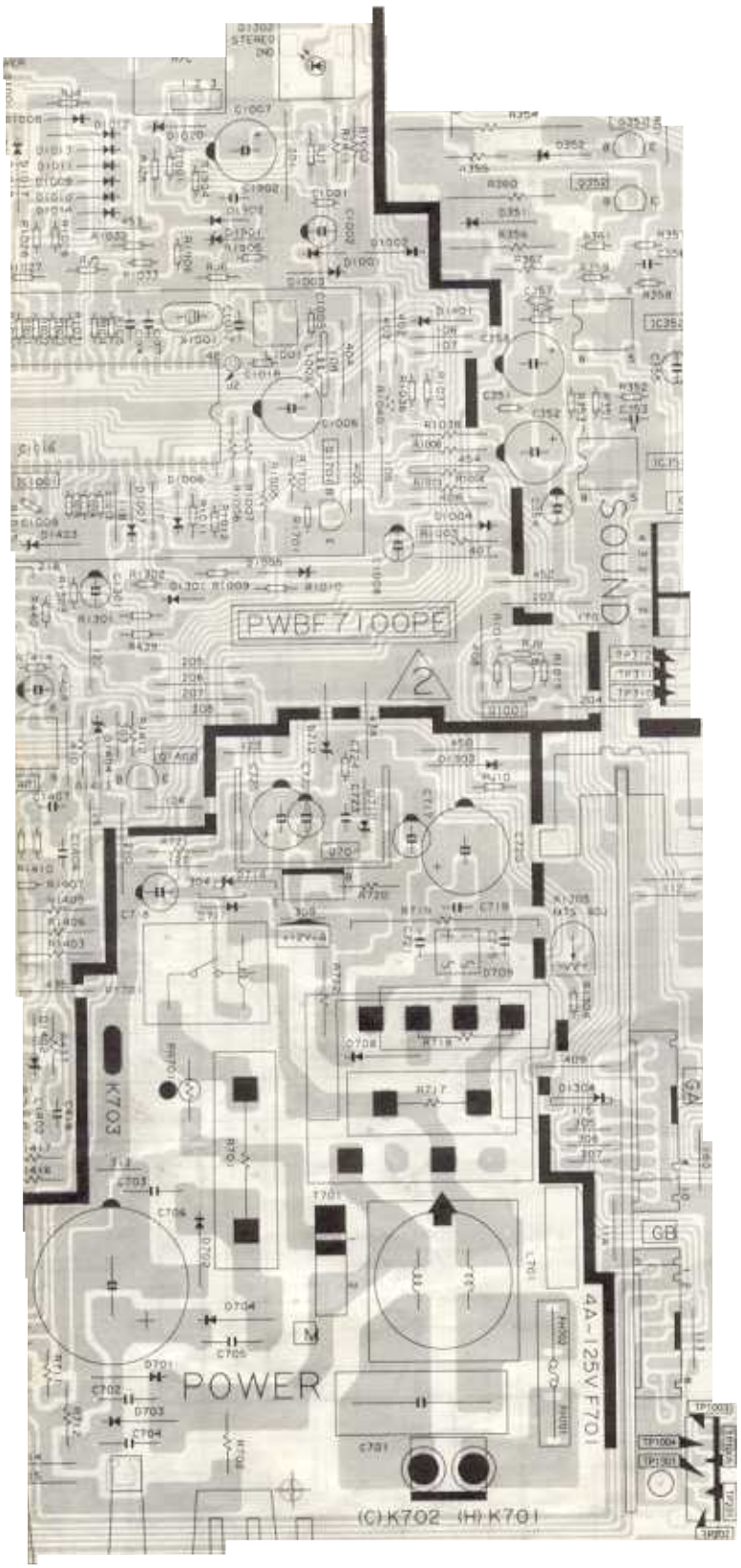


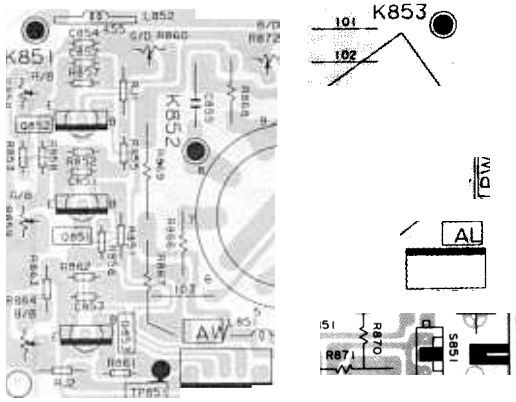
PWB-E Solder Side

PRINTED WIRING BOARD ASSEMBLIES



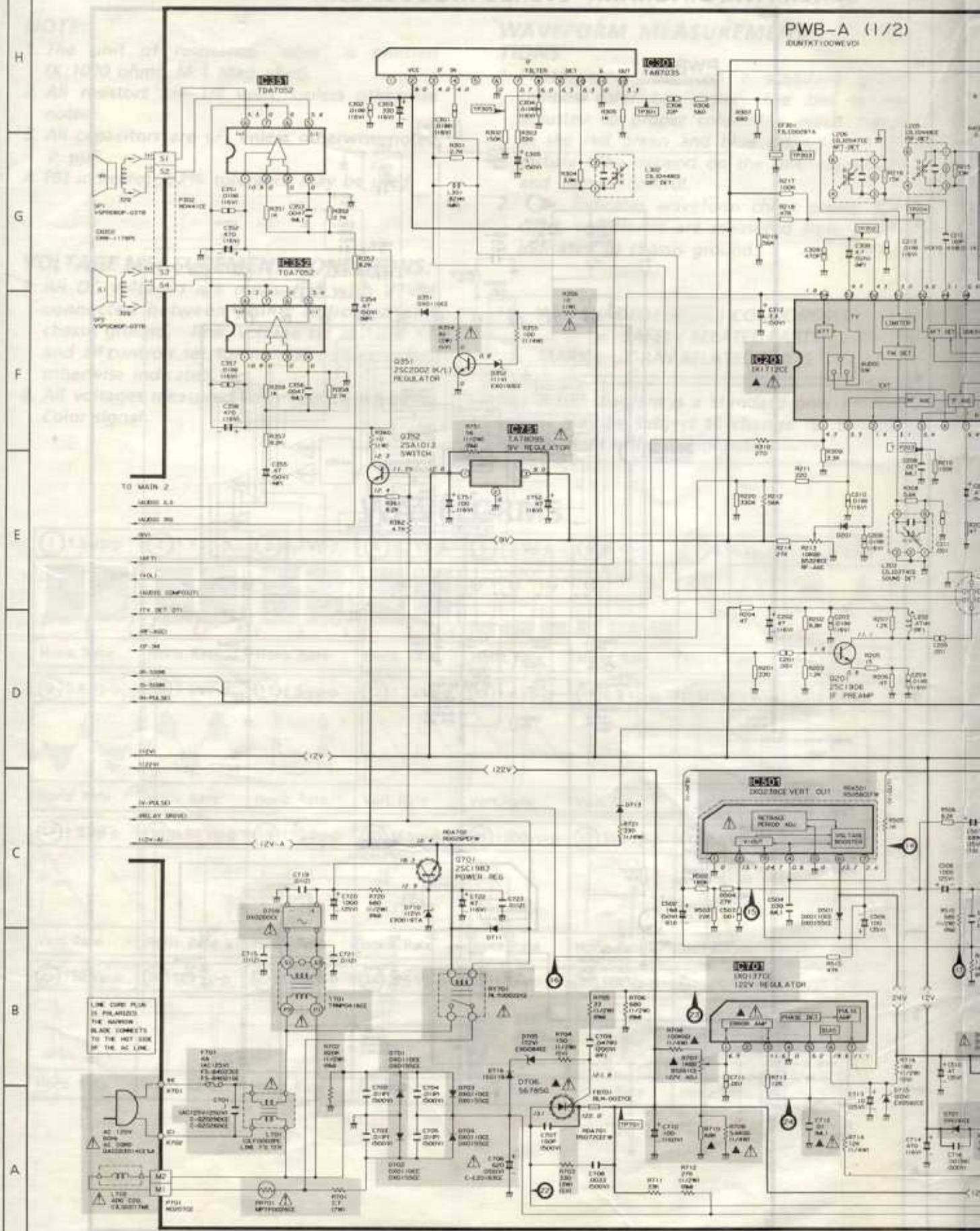
PWB-A Wiring Side

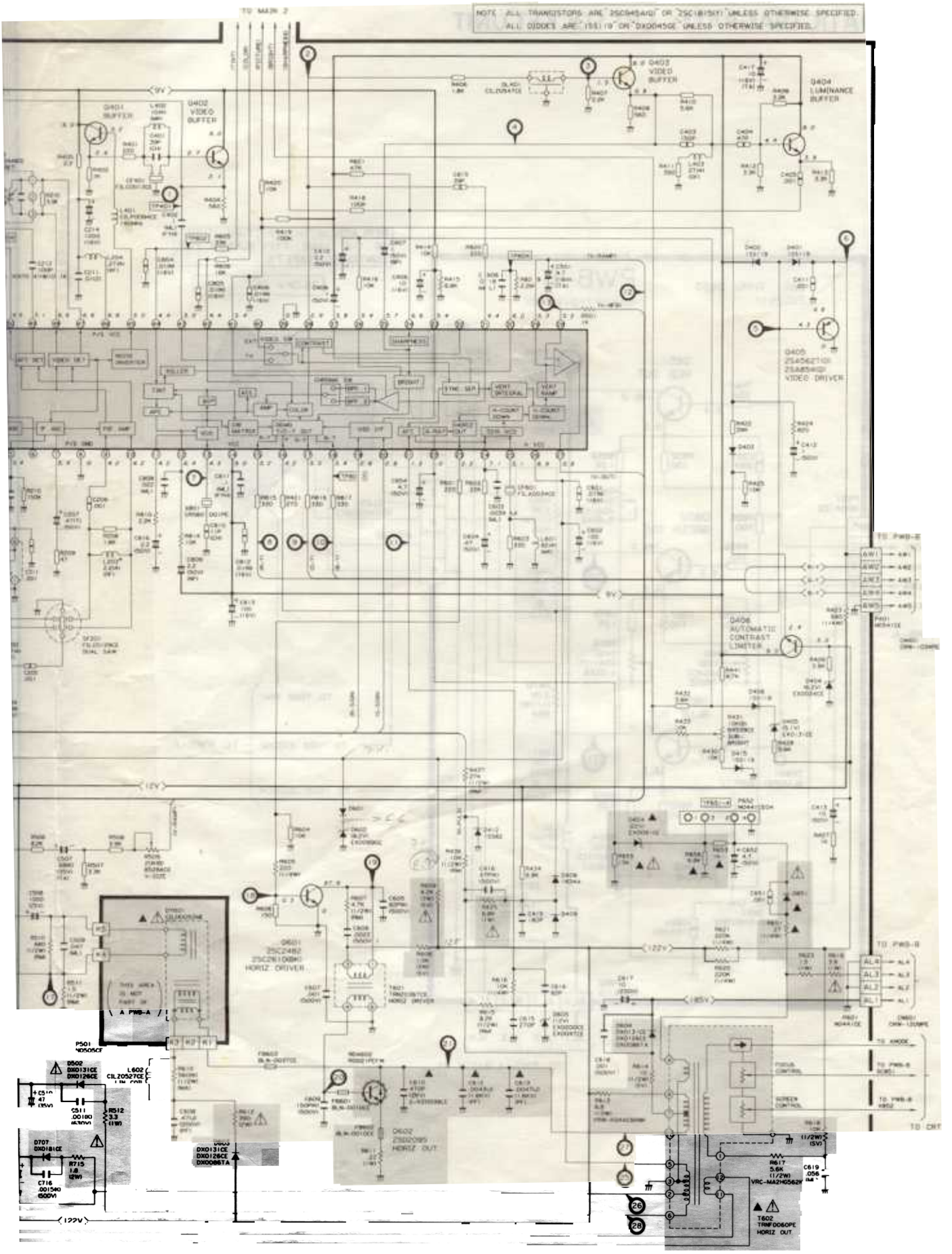




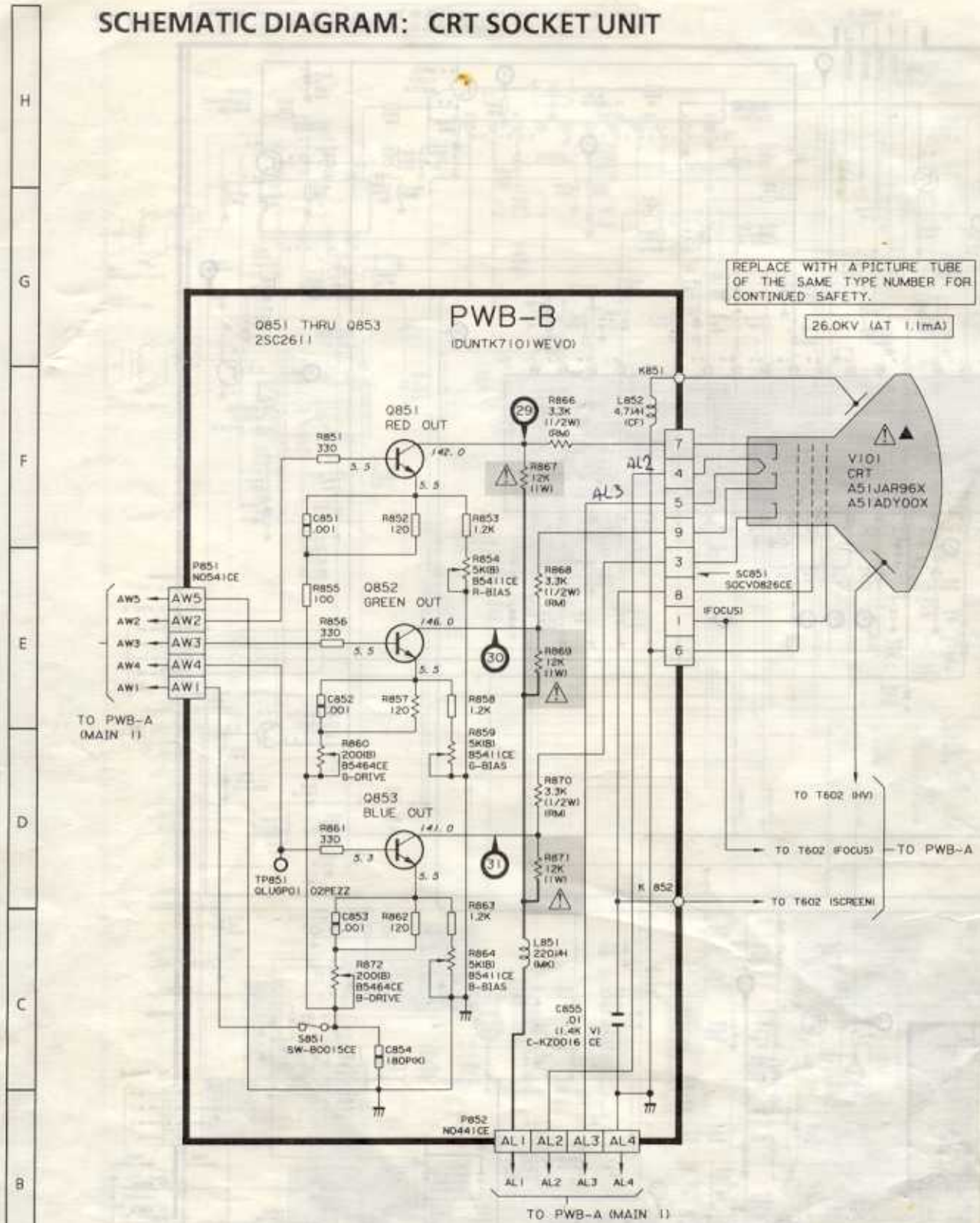
PWB-B Wiring Side

SCHEMATIC DIAGRAM: MAIN-1

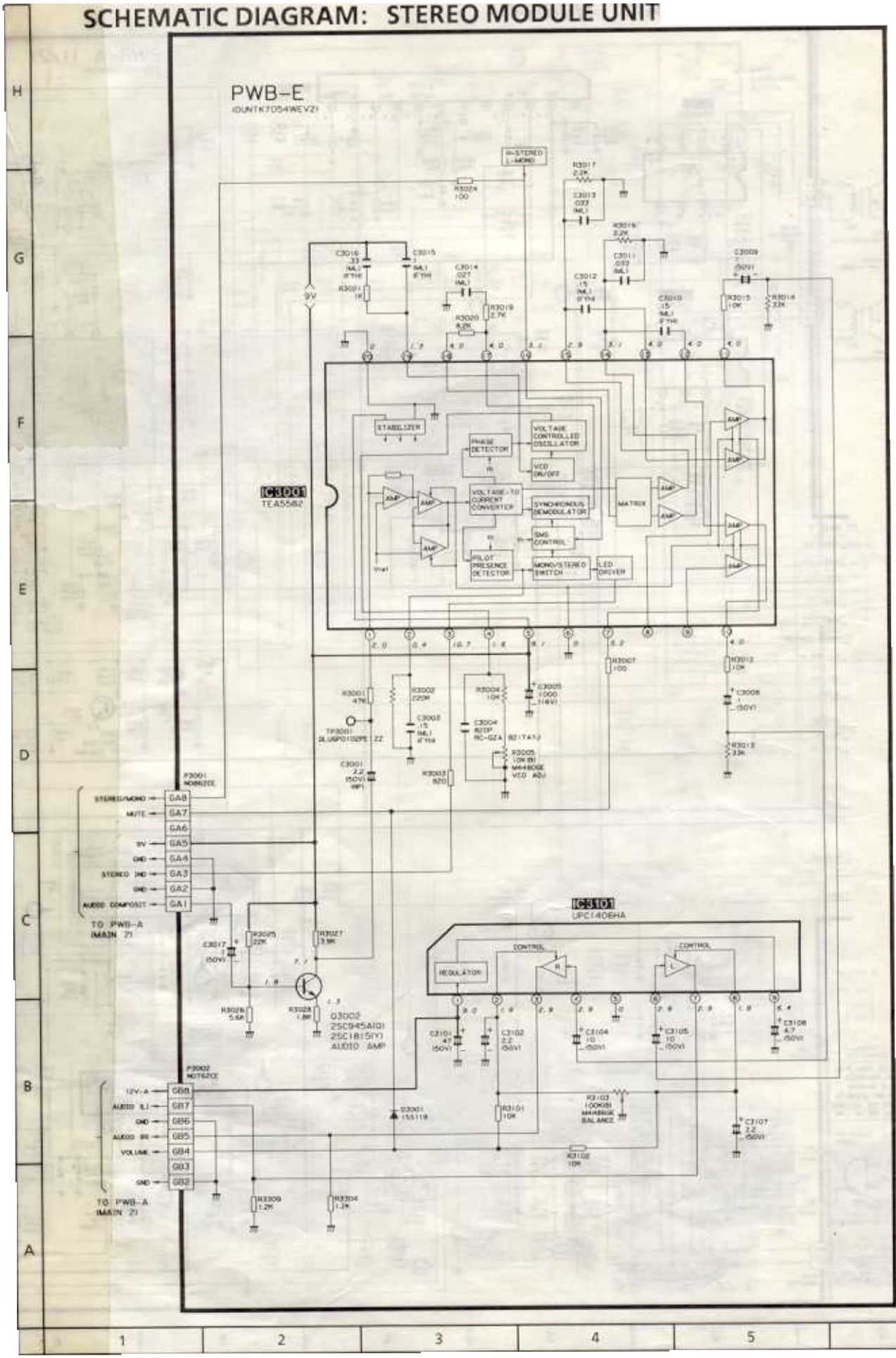



NOTE: ALL TRANSISTORS ARE 2SC945(A/Q) OR 2SC1815(Y) UNLESS OTHERWISE SPECIFIED.
ALL DIODES ARE 1SS119 OR DX00H5GE UNLESS OTHERWISE SPECIFIED.
TO MAIN 2
Q401 BUFFER
Q402 VIDEO BUFFER
Q403 VIDEO BUFFER
Q404 LUMINANCE BUFFER
Q405 2SA562TM 2SA854Q VIDEO DRIVER
Q406 AUTOMATIC CONTRAST LIMITER
Q501 2SC2482 2SC2610(BK) HORIZ. DRIVER
Q502 2SD2095 HORIZ. OUT
T602 TRNF0060PE HORIZ OUT
TO PWB-B
TO CRT
TO ANODE
TO FOCUS CONTROL
TO SCREEN CONTROL
9V
12V
122V
185V

SCHEMATIC DIAGRAM: CRT SOCKET UNIT



SCHEMATIC DIAGRAM: STEREO MODULE UNIT



DESCRIPTION OF SCHEMATIC DIAGRAM

NOTE:

1. *The unit of resistance "ohm" is omitted (K:1000 ohms, M:1 Meg ohm).*
2. *All resistors are 1/8 watt, unless otherwise noted.*
3. *All capacitors are μF, unless otherwise noted P: μμF.*
4. *(G) indicates ±2% tolerance may be used.*

VOLTAGE MEASUREMENT CONDITIONS:

1. *All DC voltages are measured with VTVM connected between points indicated and chassis ground, line voltage set at 120V AC and all controls set for normal picture unless otherwise indicated.*
2. *All voltages measured with 1000μV B & W or Color signal.*

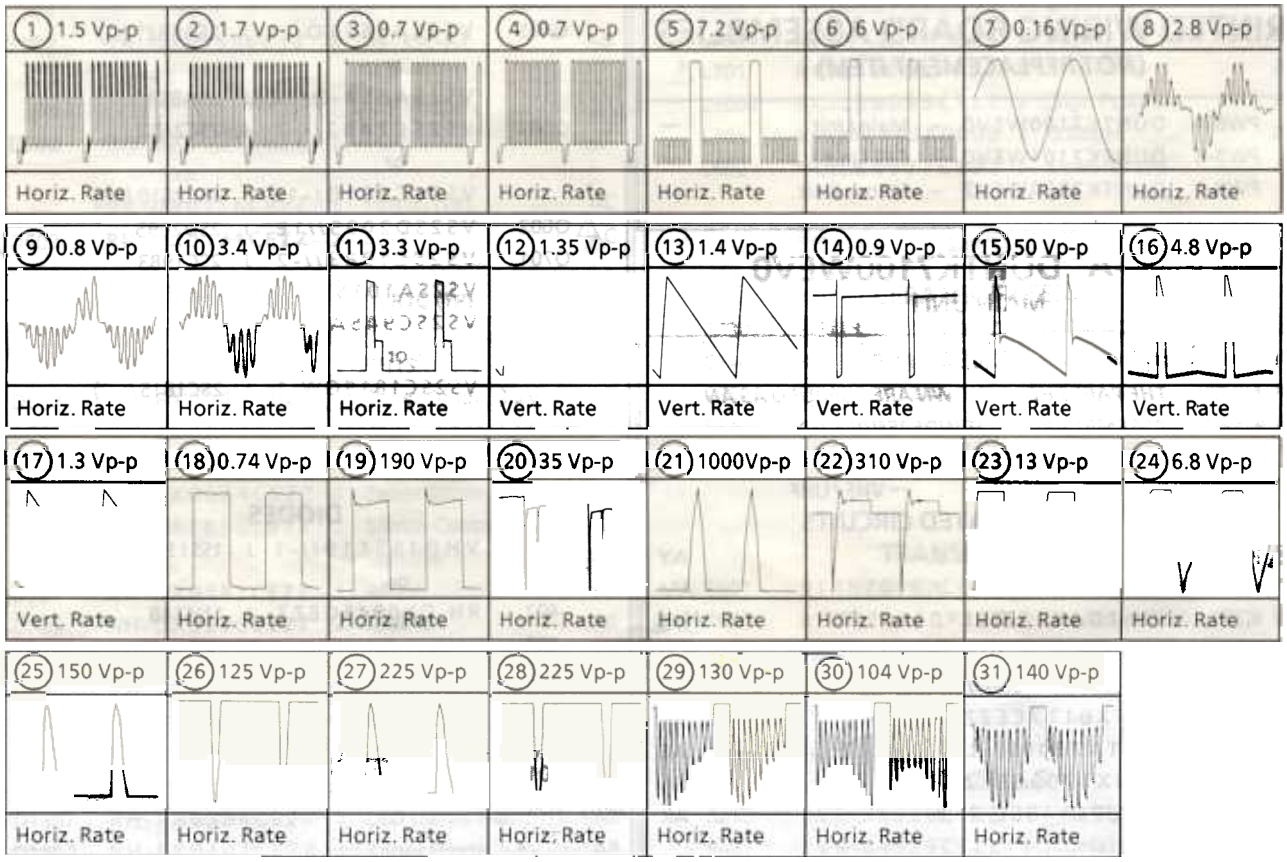
WAVEFORM MEASUREMENT CONDITIONS:

1. *Photographs taken on a standard gated rainbow color bar signal, the tint setting adjusted for proper color. The wave shapes at the red, green and blue cathodes of the picture tube depend on the tint, color level and picture control.*
2. *indicates waveform check points (See chart, waveforms are measured from point indicated to chassis ground.)*

⚠ *AND SHADED ( ) COMPONENTS = SAFETY RELATED PARTS.*
▲ *MARK = X-RAY RELATED PARTS.*

This circuit diagram is a standard one, printed circuits may be subject to change for product improvement without prior notice.

WAVEFORMS



REPLACEMENT PARTS LIST

SAFETY NOTE — Components marked with a (⚠) have special characteristics important to safety. Before replacing any of these components, read carefully the SAFETY NOTICE on page 3 of the Service Manual. Components marked with an (▲) are related to X-Ray Protection circuit.

HOW TO ORDER REPLACEMENT PARTS — To have your order filled promptly and correctly, please furnish the following information:

1. MODEL NO. 2. PART NO. 3. DESCRIPTION

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor, Please call Toll-Free; 800-447-4700

★MARK: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	★	Description	Code

PICTURE TUBE

▲⚠ V101	VB51JAR96X/*S	J	CRT	CF
	or			
	VB51ADY00X/*S	M		
▲⚠ DY601	RCiLH0052MEZZ	M	Deflection Yoke	
⚠ L702	RCiLG0017MEZZ	M	Degaussing Coil	
	PSPAG0012MEZZ	M	Wedge (Gum) — Yoke Positioning (3 pcs used)	

PRINTED WIRING BOARD ASSEMBLIES

(NOT REPLACEMENT ITEM)

PWB-A	DUNTK7100WEV0	–	Main Unit	—
PWB-B	DUNTK7101WEV0	–	CRT Unit	—
PWB-E	DUNTK7054WEV2	–	Stereo Unit	—

PWB-A DUNTK7100WEV0

MAIN UNIT

TUNER

NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.

⚠	VTUVTSG6USZP/	J	Varactor Tuner — VHF / UHF	BP

INTEGRATED CIRCUITS

▲⚠ IC201	RH-iX1712CEZZ	J		AY
IC301	VHiTA8703S/-1	J		AM
IC351, 352	VHiTDA7052/-1	J		AL
⚠ IC501	RH-iX0238CEZZ	J		AK
▲⚠ IC701	RH-iX0137CEZZ	J		AH
⚠ IC751	VHiTA7809S/-1.	J		AE
IC1001	RH-iX1709CEZZ	J		BA
IC1401	VHiUPC1486C-1	J		AK

TRANSISTORS

Q201	VS2SC1906//1E	J	2SC1906	AC
Q351	VS2SC2002-K1A	J	2SC2002	AC
Q352	VS2SA1013//1E	J	2SA1013	AD

PWB-A DUNTK7100WEV0

MAIN UNIT (Continued)

TRANSISTORS (Continued)

Q401, 402, 403, 404, 406, 1201, 1202, 1402, 1403	VS2SC945AQ/-1	J	2SC945A (Q)	AB
	or			
	VS2SC1815YW-1	J	2SC1815 (Y)	AC
Q405	VS2SA562TO/-1	J	2SA562T (O)	AD
	or			
	VS2SA854-Q/1E	J	2SA854	AC
Q601	VS2SC2482//-1	J	2SC2482	AD
	or			
	VS2SC2610/-1E	J	2SC2610 (BK)	AD
⚠ Q602	VS2SD2095//1E	J	2SD2095	AN
Q701	VS2SC1983//-2	J	2SC1983	AF
Q1401	VS2SA1015Y/1E	J	2SA1015 (Y)	AC
Q1701	VS2SC945AP/-1	J	2SC945A (P)	AB
	or			
	VS2SC1815GW-1	J	2SC1815 (GR)	AB

DIODES

D201, 401, 402, 403, 406, 409, 415, 601,	VHD1SS119//-1	J	1SS119	AB
	or			
	RH-DX0045GEZZ	J	1N4148	AA
▲⚠ 651, 711, 713, 716, 1001, 1002, 1004, 1006,				

Ref. No.	Part No.	★	Description	Code

PWB-A DUNTK7100WEV0
MAIN UNIT (Continued)

DIODES (Continued)

	1007, 1009, 1015, 1017, 1018, 1019, 1021, 1022, 1301, 1304, 1401				
	D351	RH-DX0110CEZZ	J	S5277G	AB
	D352	RH-EX0193CEZZ	J	Zener Diode, 11V	AC
	D404	RH-EX0024CEZZ	J	Zener Diode, 6.2V	AB
	D405, 1405	RH-EX0131CEZZ	J	Zener Diode, 5.1V	AB
	D408	VHD1N34A///-1	J	1N34A	AB
	D412	VHD1SS82///1A	J	1SS82	AC
	D501,	RH-DX0110CEZZ	J	S5277G	AB
⚠	701,	or			
⚠	702	RH-DX0155CEZZ	J	DS135C-AT	AB
⚠	703,				
⚠	704				
⚠	D502	RH-DX0131CEZZ	J	EU-1	AC
		or			
		RH-DX0126CEZZ	J	TVR1G (TP)	AC
⚠	D603,	RH-DX0131CEZZ	J	EU-1	AC
⚠	604	or			
		RH-DX0126CEZZ	J	TVR1G (TP)	AC
		or			
		RH-DX0086TAZZ	J	RH1S	AC
	D602	RH-EX0089CEZZ	J	Zener Diode, 8.2V	AB
	D605	RH-EX0200CEZZ	J	Zener Diode, 12V	AB
▲⚠	D654	RH-EX0091CEZZ	J	Zener Diode, 22V	AB
⚠	D705	RH-EX0084CEZZ	J	Zener Diode, 72V	AF
▲⚠	D706	VHSS6785GLB2E	J	Silicon Controlled Rectifier	AL
⚠	D707	RH-DX0181CEZZ	J	RG2V	AE
⚠	D709	RH-DX0200CEZZ	J	IT4B42	AE
	D710	RH-EX0019TAZZ	J	Zener Diode, 12V	AB
	D715	RH-EX0592CEZZ	J	Zener Diode, 20V	AB
	D1003	RH-EX0103CEZZ	J	Zener Diode, 5.6V	AB
	D1005, 1404	RH-EX0138CEZZ	J	Zener Diode, 6.8V	AB
	D1302	RH-PX0304CEZZ	J	LED stereo ind.	AC
	D1402	RH-EX0102CEZZ	J	Zener Diode, 5.6V	AB
	D1403	RH-EX0161CEZZ	J	Zener Diode, 7.5V	AB
	D1901	RH-EX0043TAZZ	J	Zener Diode, 5.6V	AB

Ref. No.	Part No.	★	Description	Code

PWB-A DUNTK7100WEV0
MAIN UNIT (Continued)

PACKAGED CIRCUITS

⚠	PR701	RMPTP0026CEZZ	J	Positive coefficient Thermistor	AF
	X801	RCRSB0001PEZZ	R	Crystal 3.58MHz	AL
	X1001	RCRSB0004PEZZ	R	Crystal 4MHz	AH

COILS AND DALAY LINE

	DL401	RCiLZ0547CEZZ	J	Delay Line	AH
	L202	VP-RFR47K0000	J	0.47µH	AB
	L203	VP-RFR2R2K0000	J	2.2µH	AB
	L204	VP-XFR27K0000	J	0.27µH	AB
	L205, 302	RCiLi0448CEZZ	J	PiF Detection Quasi Detection	AD
	L206	RCiLi0547CEZZ	J	AFT Detection	AD
	L303	RCiLi0374CEZZ	J	Sound Detection	AD
	L401	RCiLP0094CEZZ	J	180MHz Filter	AB
	L402, 1402	VP-MK100K0000	J	10µH	AB
	L403	VP-OF270K0000	J	27µH	AE
	L601	VP-MK820K0000	J	82µH	AB
⚠	L701	RCiLF0003PEZZ	R	Line Filter	AP
	L1001	RCiLB0035CEZZ	J	Sign Position	AF
	L301	VP-MKR82K0000	J	0.82µH	AB
	L602	RCiLZ0527CEZZ	J	Linearty coil	AF

CERAMIC FILTERS

	CF301	RFiLC0029TAZZ	J	Sound Take-off	AD
	CF401	RFiLC0013CEZZ	J	4.5MHz Trap	AE
	CF601	RFiLA0034CEZZ	J	503kHz	AD
	SF201	RFiLC0129CEZZ	J	Surface Acoustic wave Filter	AN

TRANSFORMERS

	T601	RTRNZ0367CEZZ	J	Horizontal Driver	AK
▲⚠	T602	RTRNF0060PEZZ	R	Horizontal output	BD
⚠	T701	PTRNP0416CEZZ	J	Power	AV

CONTROLS

	R213	RVR-B5328CEZZ	J	10k (B) RF-AGC	AC
	R431	RVR-B4539CEZZ	J	10k(B)Sub-Brightness	AC
	R509	RVR-B5266CEZZ	J	20k (B) V-Size	AB
▲⚠	R707	RVR-B5261CEZZ	J	1k (B) 122V Adj.	AB
	R1202, 1227	RVR-B5269CEZZ	J	100k (B) Sub-Color 100k (B) Sub-Tint	AB
	R1305	RVR-B5265CEZZ	J	10k (B) MTS Adj.	AB

Ref. No.	Part No.	★	Description	Code

PWB-A DUNTK7100WEV0

MAIN UNIT (Continued)

CAPACITORS

C214, 1405	VCEAGA1CW108M	J	1000	16V	Electrolytic		AD
C303	VCEAGA1CW337M	J	330	16V	Electrolytic		AC
C308	VCE9AA1HW475M	J	4.7	50V	Electrolytic, (N.P.)		AC
C407	VCE9AA1HW105M	J	1	50V	Electrolytic, (N.P.)		AB
C416	VCCSPA2HL470K	J	47p	500V	Ceramic		AA
C417	VCSATA1CE106K	J	10	16V	Tantalum		AD
C501	VCSATA1CE475K	J	4.7	16V	Tantalum		AC
C506	VCEAGA1VW107M	J	100	35V	Electrolytic		AC
C507	VCSATA1VE684K	J	0.68	35V	Tantalum		AC
C508	VCEAGA1EW108M	J	1000	25V	Electrolytic		AD
C511	VCQPSB2JA102K	J	0.001	630V	Polypro Film		AB
C602, 751, 813	VCEAGA1CW107M	J	100	16V	Electrolytic		AB
C605	VCCSPA2HL820K	J	82p	500V	Ceramic		AA
C606	VCKYPA2HB222K	J	0.0022	500V	Ceramic		AA
C607, 618	VCKYPA2HB102K	J	0.001	500V	Ceramic		AA
C608	VCFPPD2DB474J	J	0.47	200V	Metalized Polypro Film		AE
C609, 707	VCKYPA2HB151K	J	150p	500V	Ceramic		AA
▲⚠ C610	RC-KZ0038CEZZ	J	2kV	470p	Ceramic		AB
▲⚠ C612	VCFPPD3CA432J	J	0.0043	1600V	Metalized Polypro Film		AD
▲⚠ C613	VCFPPD3CA472J	J	0.0047	1600V	Metalized Polypro Film		AD
C617	VCEAGA2EW106M	J	10	250V	Electrolytic		AC
⚠ C701	RC-QZ029DCEZZ	J	0.1	AC125V	Mylar		AF
	or						
	RC-QZ026DCEZZ	J	0.1	AC250V	Mylar		AF
C702, 703, 704, 705	VCKYPB2HE103P	J	0.01	500V	Ceramic		AB
⚠ C706	RC-EZ0183CEZZ	J	620	200V	Electrolytic		AN
C708	VCKYPA2HB332K	J	0.0033	500V	Ceramic		AB
C709	VCQPSB2DA473K	J	0.047	200V	Polypro Film		AB
⚠ C710	VCEAAH2CW107M	J	100	160V	Electrolytic		AE
▲⚠ C712	VCQYSH1HM103K	J	0.01	50V	Mylar		AA
C352, 358, 714, 1007	VCEAGA1CW477M	J	470	16V	Electrolytic		AC
C716	VCKYPA2HB152K	J	0.0015	500V	Ceramic		AA

Ref. No.	Part No.	★	Description	Code

PWB-A DUNTK7100WEV0
MAIN UNIT (Continued)

CAPACITORS (Continued)

C809	VCE9AA1HW225M	J	2.2	50V	Electrolytic, (N.P.)		AB
C1006	VCEAGA0JW108M	J	1000	6.3V	Electrolytic		AC
C354, 355, 1410	VCE9AA1HW474J	J	0.47	50V	Electrolytic (N.P.)		AC
C720	VCEAGA1VW108M	J	1000	35V	Electrolytic		AD

RESISTORS

⚠ R354	VRS-SV3LB820J	J	82	3W	Oxide Film		AB
⚠ R356, 360	VRS-VV3AB100J	J	10	1W	Oxide Film		AA
⚠ R435	VRS-VV3AB682J	J	6.8k	1W	Oxide Film		AA
⚠ R512	VRN-VV3AB3R3J	J	3.3	1W	Metal coating		AA
⚠ R608	VRS-SV3LB152J	J	1.5k	3W	Oxide Film		AB
⚠ R609	VRS-SV3LB822J	J	8.2k	3W	Oxide Film		AB
⚠ R611	VRN-VV3ABR22J	J	0.22	1W	Metal coating		AA
⚠ R612	VRS-VV3DB391J	J	390	2W	Oxide Film		AA
⚠ R613	VRW-KQ4AC6R8K	J	6.8	10W	Cement		AF
⚠ R614	VRS-SV2HC100J	J	10	1/2W	Oxide Film		AA
⚠ R617	VRC-MA2HG562K	J	5.6k	1/2W	Solid		AA
⚠ R618	VRS-SV2HC103J	J	10k	1/2W	Oxide Film		AA
⚠ R619	VRN-VV3AB3R9J	J	3.9	1W	Metal coating		AA
⚠ R623	VRN-VV3AB1R5J	J	1.5	1W	Metal coating		AA
▲⚠ R651	VRD-RA2EE270J	J	27	1/4W	Carbon		AA
▲⚠ R653	VRD-MN2BE102J	J	1k	1/8W	Carbon(chip)		AA
▲⚠ R655	VRD-MN2BE153J	J	15k	1/8W	Carbon(chip)		AA
▲⚠ R656	VRD-MN2BE682J	J	6.8k	1/8W	Carbon(chip)		AA
⚠ R701	VRW-KV3NC2R7K	J	2.7	7W	Cement		AC
⚠ R702	VRD-RM2HD824J	J	820k	1/2W	Carbon		AA
⚠ R703	VRS-SV3LB331J	J	330	3W	Oxide Film		AC
⚠ R704	VRS-SV2HC151J	J	150	1/2W	Oxide Film		AA
⚠ R705	VRD-RM2HD330J	J	33	1/2W	Carbon		
▲⚠ R708	VRD-RA2EE104G	J	100k	1/4W	Carbon		AA
▲⚠ R709	VRD-RA2EE562G	J	5.6k	1/4W	Carbon		AA
▲⚠ R710	VRD-MN2BE683J	J	68k	1/8W	Carbon(chip)		AA
⚠ R715	VRN-VV3DB1R8J	J	1.8	2W	Metal coating		AA
⚠ R751	VRD-RM2HD560J	J	56	1/2W	Carbon		
⚠ R1403	VRS-VV3AB223J	J	22k	1W	Oxide Film		AA

RELAY

⚠ RY701	RRLYU0022CEZZ	J	Relay, Power		AH

Ref. No.	Part No.	★	Description	Code

PWB-A DUNTK7100WEV0
MAIN UNIT (Continued)

Ref. No.	Part No.	★	Description	Code
SWITCHES				
S1001, 1002, 1003, 1004, 1005, 1006, 1007	QSW-K0068CEZZ	J	Power, Volume Up, Volume Down, Channel Up, Channel Down, Video Set-Up	AB
MISCELLANEOUS PARTS				
	RRMCU0195CEZZ	J	R/C Receiver	AK
⚠ F701	QFS-B4023CEZZ	J	Fuse, 4A (AC125V)	AC
	or			
	QFS-B4021GEZZ	J	Fuse, 4A (AC125V)	AE
	QFSHD1002CEZZ	J	Fuse Holder (F701, 2 used)	AA
FB601, 602	RBLN-0010CEZZ	J	Ferrite Bead	AC
FB603, 701	RBLN-0037CEZZ	J	Ferrite Bead	AB

PWB-B DUNTK7101WEV0
CRT UNIT

Ref. No.	Part No.	★	Description	Code
TRANSISTORS				
Q851, 852, 853	VS2SC2611/-1E	J	2SC2611	AE
COILS				
L851	VP-MK221K0000	J	220µH	AB
L852	VP-CF4R7K0000	J	4.7µH	AB
CONTROLS				
R854, 859, 864	RVR-B5411CEZZ	J	5k (B) Red Bias, Green Bias, Blue Bias	AC
R860, 872	RVR-B5464CEZZ	J	200 (B) Green Drive, Blue Drive	AC
CAPACITOR				
C855	RC-KZ0016CEZZ	J	0.01 1.4kV Ceramic	AC
RESISTORS				
⚠ R867, ⚠ 869, ⚠ 871	VRS-VV3AB123J	J	12k 1W Oxide Film	AA
MISCELLANEOUS PARTS				
SC851	QSOCV0826CEZZ	J	CRT Socket	AK
S851	QSW-B0015CEZZ	J	Switch, Cut off	AC

PWB-E DUNTK7054WEV2
STEREO UNIT

Ref. No.	Part No.	★	Description	Code
INTEGRATED CIRCUITS				
IC3001	VHiTEA5582/-1	J		AT
IC3101	VHiUPC1406HA1	J	UPC1406HA	AH
TRANSISTORS				
Q3002	VS2SC945AQ/-1	J	2SC945A(Q)	AB
	or			
	VS2SC1815YW-1	J	2SC1815(Y)	AC
DIODE				
D3001	VHD1SS119//-1	J	1SS119	AB
CONTROLS				
R3005	RVR-M4480GEZZ	J	10K(B)VCO Adj.	AC
R3103	RVR-M4486GEZZ	J	100K(B) Balance	AC
CAPACITOR				
C3001	VCE9AA1HW225M	J	2.2 50V Electrolytic, (N.P.)	AB
C3004	RC-QZA821TAYJ	J	820p 50V Mylar	AB
C3005	VCEAGA1CW108M	J	1000 16V Electrolytic	AD

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
⚠	QACCD3014CESA	J	AC Cord	AH
⚠	QTANZ0122CEZZ	J	Antenna Terminal Board Ass'y	AU
	VSP0080P-G3Y8	M	Speaker — 32ohm (2 pcs used)	—

Ref. No.	Part No.	★	Description	Code

Ref. No.	Part No.		Description	Code

SUPPLIED ACCESSORIES

ACCESSORIES

	RRMCG0797CESA	M	Infrared Remote Control Unit	—

ACCESSORIES (*NOT REPLACEMENT ITEM*)

	TCAUH3025MEZZ	–	Safety Card	—
	TGAN-1006MEZZ	–	Guarantee Card	—
	TINS-4605MEZZ	–	Operation Manual	—

PACKING PARTS
(*NOT REPLACEMENT ITEM*)

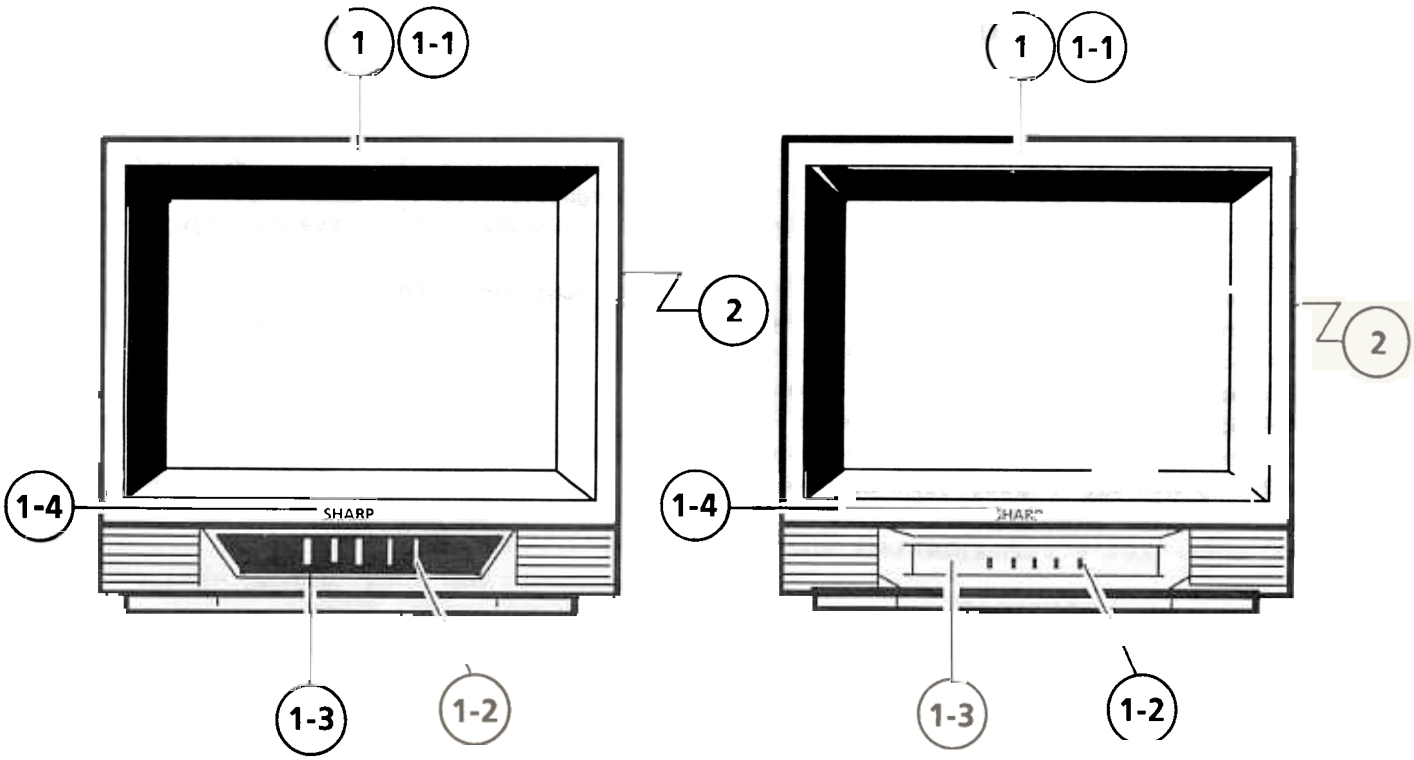
	SPAKC0449MEZZ	–	Packing Case	—
	SPAKX0128MEZZ	–	Buffer Material	—
	SSAKH0003MEZZ	–	Polystyrene Cover	—
	or			
	SSAKH0016MEZZ	–	Polystyrene Cover	—

CABINET PARTS
MODEL 20A-S100

	CCABA1109MES0	M	Cabinet, Ass'y — Front	
1-1	*Not Available*	–	Cabinet — Front	
1-2	JBTN-1020MEKA	M	Button	
1-3	HiNDP1198MEKA	M	Indication Plate	
1-4	HBDGB3006MESA	M	Badge, "SHARP"	
?	GCABB1070MEKA	M	Cabinet — Rear	

CABINET PARTS
MODEL 20A-S120

	CCABA1120MES0	M	Cabinet, Ass'y — Front	
1-1	*Not Available*	–	Cabinet — Front	
1-2	JBTN-1018MEKA	M	Button	
1-3	HiNDP1197MEKA	M	Indication Plate	
1-4	HBDGB3006MESA	M	Badge, "SHARP"	
	GCABB1070MEKA	M	Cabinet — Rear	



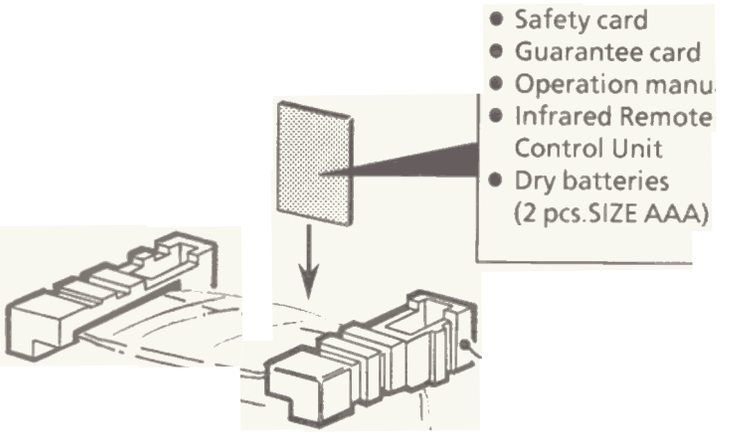
MODEL 20A-S100

MODEL 20A-S120

PACKING OF THE SET

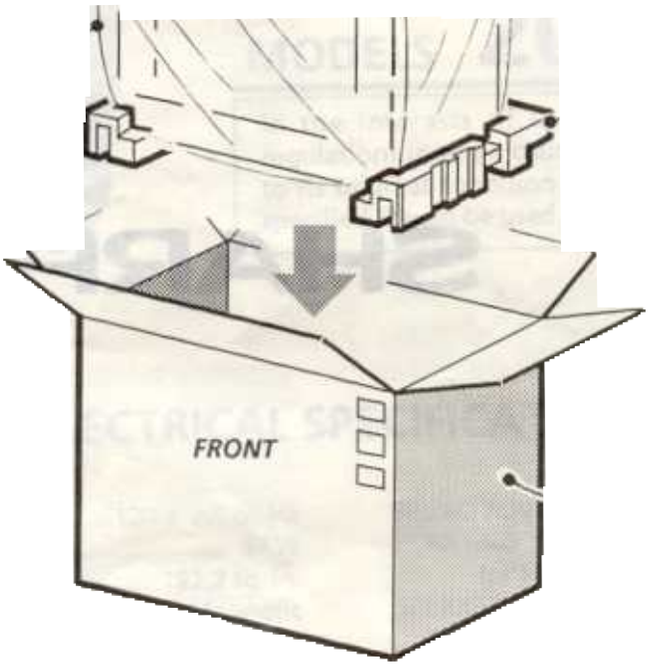
● **Setting positions of the knobs**

POWER switch	OFF



ɔlystyrene cover

material



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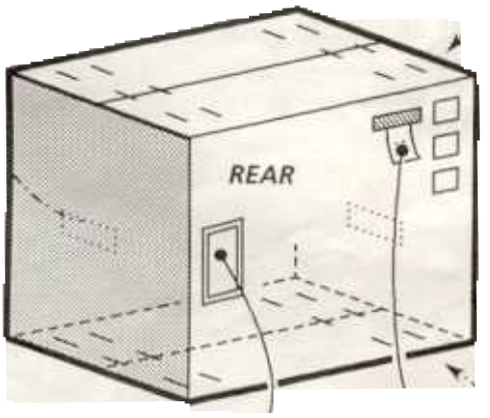

Use 24 staple to fix the packing case.

Bar code label

Number card

20A-S100
20A-S120

SHARP

T8027-S
Printed in Japan
W/S YO.KD